

REMARKS

This submission adds new claims 22-44 and amends claim 7.

Claims 1-2, 4-7, and 9-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Collins III et al., Publication Number 2002/0187571 (hereinafter "Collins"). Applicants respectfully traverse the rejection.

Claim 1 recites "an underfill between a first surface of the light emitting diode and a first surface of the submount, wherein the underfill has characteristics to reduce contamination of the light emitting diode by the phosphor material." In rejecting claim 1, the Examiner states:

Collins et al. teach . . . an underfill material (66, Fig. 4B) between a first surface of the light emitting diode and a first surface of the submount. Collins et al. do not expressly teach that the underfill has characteristics to reduce contamination of the light emitting diode by the phosphor material. However, it is inherent in Collins's device because the underfill of Collins comprises a same material with the present invention. Therefore, the underfill of Collins also has characteristics to reduce contamination of the light emitting diode by the phosphor material.

Layer 66 is described in paragraph [0028] as "a second insulating layer 66 . . . deposited in the gaps between anode contacts and cathode contacts and on parts of contact layer 62." Later in the same paragraph, SiO<sub>x</sub> is recited as an example of a material suitable for insulating layer 66. Since claim 10 recites that claim 1's underfill may include a filler of silicon dioxide, the Examiner argues that layer 66 inherently includes the structure of claim 1.

Applicants respectfully submit that the Examiner's rejection is contrary to well-established principles of inherency. The test for inherency is set forth in MPEP section 2163.07(a), quoting *In re Robertson*: "To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." Emphasis added,

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citations omitted. According to the above-quoted definition of inherency, the mere recitation by Collins that SiO<sub>x</sub> may be used as Collins' insulating layer 66 does not mean that insulating layer 66 inherently has characteristics to reduce contamination of the light emitting diode by the phosphor material, because a person of skill in the art could envision embodiments of Collins' SiO<sub>x</sub> insulating layer that do not reduce contamination. For example, Collins' SiO<sub>x</sub> insulating layer 66 may contain other materials besides SiO<sub>x</sub> that encourage contamination, or may be deposited with a thickness that is incapable of reducing contamination, or over an area of structure that cannot protect the device from contamination. Since the matter in claim 1 missing from Collins, i.e. that the "underfill has characteristics to reduce contamination of the light emitting diode by the phosphor material" is not necessarily present in Collins' insulating layer 66, Collins does not inherently teach all the elements of claim 1. Claim 1 is thus allowable over Collins.

In addition, the Examiner's focus on the material forming Collins' insulating layer 66 ignores the plain language of claim 1 which states that the characteristics of the underfill reduce contamination. "Characteristics" clearly encompasses more than just material. Not every underfill layer formed of a given material will have characteristics that reduce contamination. For example, a silicon dioxide containing underfill that completely fills the space between the diode and the submount may reduce contamination, while a silicon dioxide containing underfill that occupies only a limited space between the diode and the submount may not reduce contamination. Accordingly, the Examiner's citation of a reference that teaches only an underfill material but ignores other characteristics of the underfill clearly cannot teach all the elements of claim 1. Thus, for this additional reason, claim 1 is allowable over Collins.

Claims 2-15 depend from claim 1 and are therefore allowable over Collins for at least the same reason. In addition, with regard to claim 7 and 12, Applicants can find no teaching

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of a gettering compound in Collins. In fact, the word "gettering" does not appear anywhere in Collins. Claims 7 and 12 are therefore allowable for this additional reason.

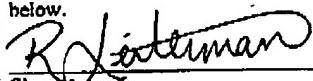
Claims 3, 8, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Collins alone or over Collins in view of various other references. Collins and the present application were, at the time the present invention was made, owned or subject to an obligation of assignment to Lumileds Lighting U.S. LLC. Accordingly, under 35 U.S.C. 103(c), Collins cannot be used as a prior art reference in a 103(a) rejection. Claims 3, 8, 13, and 15 are therefore allowable over Collins and any combination of Collins and other references.

Applicants thank the Examiner for indicating that claim 14 is allowable if amended into independent form.

In view of the above arguments, Applicants respectfully request allowance of claims 1-15 and 22-44. Should the Examiner have any questions, the Examiner is invited to call the undersigned at (408) 382-0480.

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